

REMARKS

Reconsideration and allowance of the present application are respectfully requested.

Claims 1-23 are pending in this application. Claims 5-8 and 10-15 are withdrawn. New independent claim 23 and dependent claim 24 have been added. New claim 23 is based on claim 1 and as supported in the present specification including at page 6, lines 19-20. New claim 24 is supported in the present specification including and more particularly described in Test Example 1, from page 38, line 11 to page 39, last line, and also at page 22, line 14 and page 24, lines 13-24. No new matter has been added.

The presently claimed invention comprises a fine hollow powder, as recited for example in claim 1 which is obtained by spray drying a laminated titania sol, as claimed for example in claim 4. The powder has an outer shell which is composed of flaky titanium oxide stuck together and an inner space (the space is rather large), the shape of which is a balloon form, a pingpong ball form, etc., as described at page 6, lines 17-22, and also with reference to Figure 1 and Figure 6 of the present application.

The applicants respectfully traverse the rejection of claims 1-4 and 9 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4 of USP 5,863,514 (US '514). These claims of US '514 relate to a titanium oxide porous body consisting essentially of an aggregate of lamina shaped titanium oxide particles (claim 1). The porous body obtained by a vacuum freeze drying process, not a spray drying process, and has a cotton-like porous appearance. With respect to pores, the spaces formed by piling of thin fragments in a disordered fashion

serves as pores.

The US '514 claims do not disclose nor suggest a fine hollow powder of the presently claimed invention having a balloon shape. Further, the US '514 claims do not disclose nor suggest the spray drying a laminated titania sol of the presently claimed invention. Accordingly, the US '514 claims also do not disclose nor suggest the process using the fine hollow powder of the presently claimed invention.

The Office Action (page 4, lines 1-2) appears to equate "hollow" particles of the presently claimed invention with "porous" body consisting an aggregate" of US '514.

The applicants respectfully disagree. According to Webster's New World College Dictionary, "hollow" is defined as "having an empty space or only air within it, having a cavity inside" and "porous" is defined as "full of pores through which fluids, air or light may pass" and "pores" is defined as "a tiny opening usually microscopic, ... through which fluids may be absorbed or discharged" (copy of pages 680 and 1121 attached to this Amendment). The applicants submit that a person of ordinary skill in the art would clearly understand the significant difference between "hollow" and "porous" based on these two definitions. The pores are tiny passage ways through which e.g. fluids may pass which a hollow is an empty space inside.

Accordingly, the applicants submit that present claims 1-4 and 9 are fully allowable under the judicially created doctrine of obviousness type double patenting over claims 1-4 of US '514.

The applicants respectfully traverse the rejection of claims 1-4 and 9 under 35 USC 102(b) in view of US '514. This reference does not anticipate the presently claimed invention or make it obvious.

As noted above, US '514 discloses a titanium oxide porous body consisting essentially of an aggregate of lamina shaped titanium oxide particles (see for example, claim 1). The porous body obtained by a vacuum freeze drying process, not a spray drying process as in the presently claimed invention, and has a cotton-like porous appearance (see Example 1, column 4, lines 38-42). US '514 describes the spaces formed by piling of thin fragments in a disordered fashion serves as pores (column 3, lines 15-17).

However, the “hollow” particles of the presently claimed invention has been shown by documentary evidence, attached hereto, as being significantly distinguished from the “porous” body of US '514.

US '514 does not disclose nor suggest the spray drying of the present invention. The freeze drying of US '514 is explained and distinguished in the present specification (see page 3, lines 1-9, JP-A-9-67124 is a Japanese counterpart of US '514). Here it is described that the well known process of freeze drying requires such drying of a dilute exfoliated titania sol to obtain fine powder with a distinguished dispersibility. In other words, freezing of a relatively large amount of water is inevitable before vacuum drying and thus an enormous amount of energy must be consumed, causing an economical problem.

Accordingly, the presently claimed invention is not only allowable under Section 102(b) as unanticipated, but is additionally allowable under Section 103(a) as unobvious, in view of US '514.

The applicants respectfully traverse the rejection of claims 16-22 under 35 USC 103(a) in view of US '514. This reference does not make the presently claimed invention to be obvious.

The fine laminated titanium oxide powder, as recited in claims 16 and 17 are obtained by pulverizing of fine hollow powder of the claim 1. US '514 does not disclose nor suggest this process.

Claims 18 and 19 of the present application recite a process of the invention. The applicants submit that since US '514 does not disclose nor suggest the fine hollow powder of claim 1, then claims 18 and 19, which use the fine hollow powder, are also allowable.

Similarly, the applicants submit that since US '514 does not disclose nor suggest the fine hollow powder of claim 1, then claims 20-22, which use the fine hollow powder, are also allowable.

In view of the above and the attached document, it is believed that this present application is in condition for allowance and a Notice to that effect is respectfully requested.

Respectfully submitted,

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